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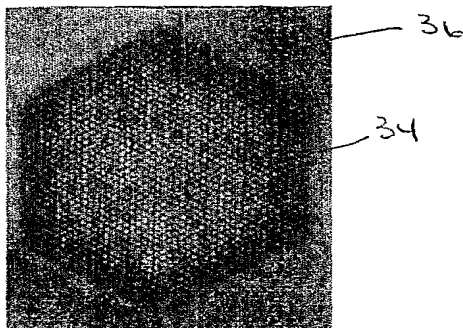
**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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(54) Title: FIBER OPTIC INTERROGATED MICROFLUIDIC DEVICE



(57) Abstract: The present invention provides a microfluidic device that can be used for fiber optic interrogation of multiple samples. The device comprises a substrate integrally comprising a plurality of optic fibers. A layer formed on a surface of the substrate defines at least one topological feature that communicates with at least one optic fiber for interrogation of a sample. The device preferably comprises a plurality of topological features that may include a patterned array of wells, channels or any combinations thereof. The plurality of optic fibers of a device of the invention are capable of interrogating thousands of samples simultaneously. These samples may include, without limitation, molecular, cellular, proteomic, genomic or gaseous materials or assays. The present invention also discloses a method for fabricating a microfluidic device. The invention also comprises a method for interrogating multiple samples in parallel via the microfluidic devices provided herein.

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